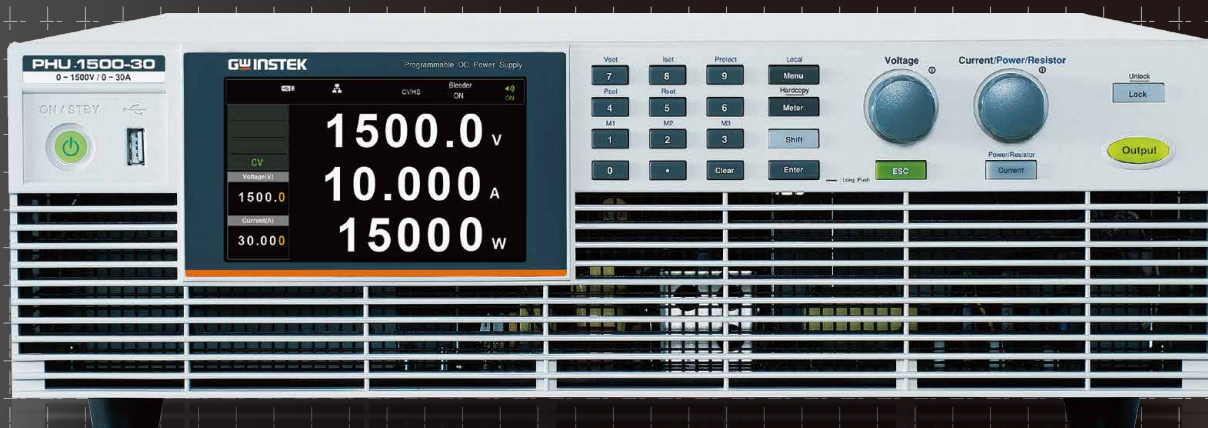




# PHU- 系列

## 宽范围大功率直流电源

### 特点

- 电压输出: 80V/ 200V/ 500V/ 750V/ 1000V / 1500V
- 功率输出: 5KW/ 10KW/ 15KW
- 最大电流输出: 510A; 3U高度和19" 机架安装尺寸
- C.V/ C.C 优先模式
- 可调电压/电流上升和下降时间
- AWS (高级Web控件)
- APC (自适应并联)
- 并联 (最多 10 units)
- 高效能和高功率密度
- 泄放控制功能
- 内阻可调
- 保护: OVP, OCP, OHP, UVL, AC Fail, FAN Fail
- 标配: USB, LAN, Isolated Analog control
- 选配: RS-232C&485或GPIB或CAN Bus或DeviceNet或ANY Bus

**GW INSTEK**  
固纬电子

PHU- 系列是一款单通道可编程直流电源，具有多量程输出功能，可提供广泛的电压和电流组合，具有更高的灵活性。电路设计采用 SiC 碳化硅元件，实现高功率密度特性，3U 高度最大输出 15kW。

PHU 的电压和电流范围广，加上其高功率特性，可以覆盖光伏系统、电动汽车、汽车电子等更广泛的测试应用。PHU 大功率直流电源的推出增强了固纬直流电源产品线的完整性，并为客户提供更全面、更集成的解决方案。

AWS（高级 Web 服务器）功能允许用户直接通过网络浏览器操作设备，而无需安装任何复杂的软件或驱动程序。此功能使您能够更高效地完成任务，节省时间并提高生产力。

独特的 APC（自适应并联）功能提供了并联的适应性，允许用户根据自己的需求做出最佳选择。例如，用户可以选择 15kW 型号和 10kW 型号，将两者结合起来以达 25kW，所有这些都在他们的预算限制范围内。PHU 最多可连接 10 台机组，功率可达 150kW，无需额外配电进行控制。

对于工业接口，PHU 提供了多种嵌入式工业接口选项以满足用户需求。PHU 可用端口包括 EtherCAT、CANopen、Modbus、Profinet 和 DeviceNet 等。除了标准的内置可编程序列功能外，PHU 还提供 Datalogger、太阳能电池阵列模拟器、AH/WH 表和电池模拟等多种选配功能，以满足客户的要求。

共有 18 种型号，包括 3 种功率容量（5kW/10kW/15kW）和 6 种电压（80V/200V/500V/750V/1000V/1500V），以满足所有客户的需求。

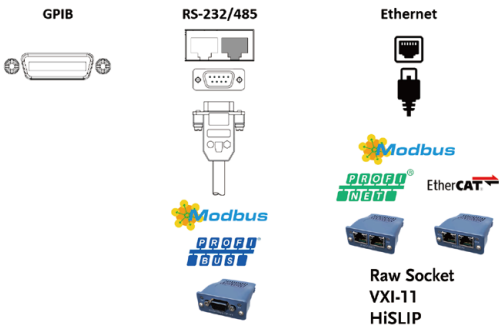
| 5KW         |                  | 10KW        |                   | 15KW        |                   |
|-------------|------------------|-------------|-------------------|-------------|-------------------|
| 型 号         | 规 格              | 型 号         | 规 格               | 型 号         | 规 格               |
| PHU 80-170  | 80 V/170 A/5 kW  | PHU 80-340  | 80 V/340 A/10 kW  | PHU 80-510  | 80 V/510 A/15 kW  |
| PHU 200-70  | 200 V/70 A/5 kW  | PHU 200-140 | 200 V/140 A/10 kW | PHU 200-210 | 200 V/210 A/15 kW |
| PHU 500-30  | 500 V/30 A/5 kW  | PHU 500-60  | 500 V/60 A/10 kW  | PHU 500-90  | 500 V/90 A/15 kW  |
| PHU 750-20  | 750 V/20 A/5 kW  | PHU 750-40  | 750 V/40 A/10 kW  | PHU 750-60  | 750 V/60 A/15 kW  |
| PHU 1000-15 | 1000 V/15 A/5 kW | PHU 1000-30 | 1000 V/30 A/10 kW | PHU 1000-45 | 1000 V/45 A/15 kW |
| PHU 1500-10 | 1500 V/10 A/5 kW | PHU 1500-20 | 1500 V/20 A/10 kW | PHU 1500-30 | 1500 V/30 A/15 kW |

### A. AWS (高级 Web 服务器)



AWS 是一个强大的功能，可以简化操作。使用 AWS，您可以直接通过网络浏览器操作设备，而无需安装任何复杂的软件或驱动程序。此功能使您能够更高效地完成任务，节省时间并提高生产力。只需连接到 LAN，通过 Web 浏览器输入 IP 地址就可以执行设备控制，参数设置和功能切换等任务，而无需安装或学习任何其他软件。

### B. 工业接口



**CAN**

PHU- 系列提供各种嵌入式工业接口选项以满足用户需求，用户无需准备额外接口

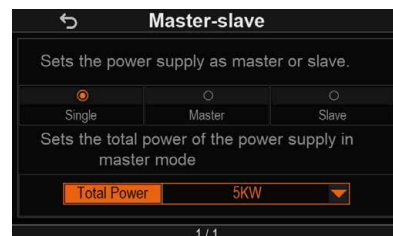
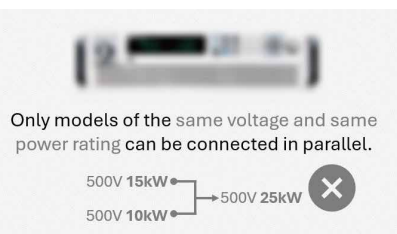
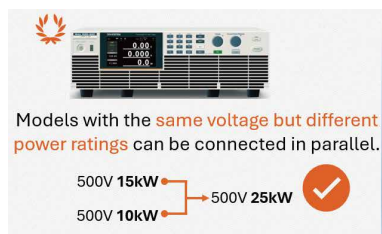
DeviceNet

USB-CDC  
USB-TMC

Modbus  
Profinet  
EtherCAT

Raw Socket  
VXI-11  
HiSLIP

## C. APC (自适应并联)

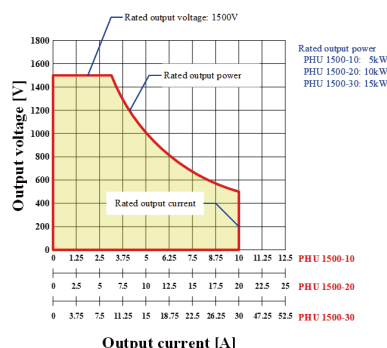
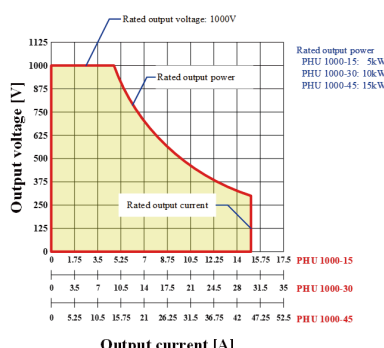
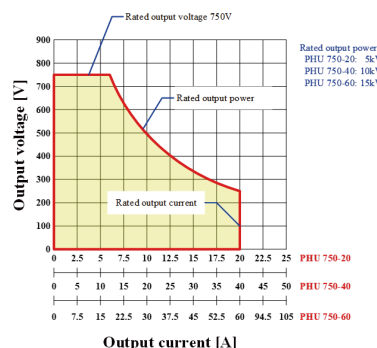
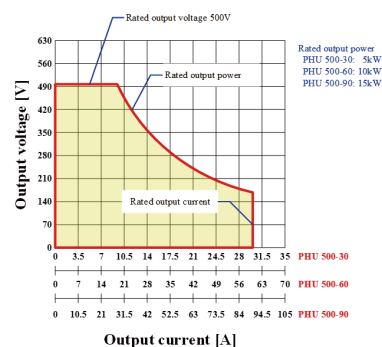
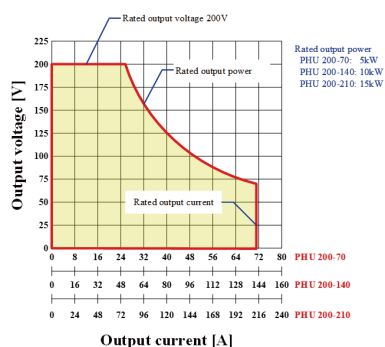
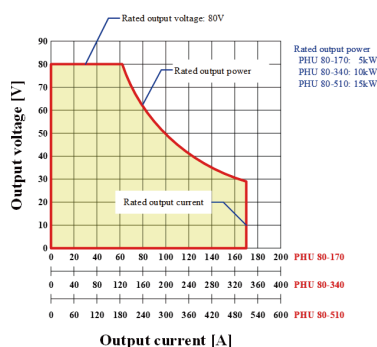


并联功能master-slave设置

独特的 APC (自适应并联) 功能提供了并联的适应性, 允许用户根据自己的需求做出最佳选择。

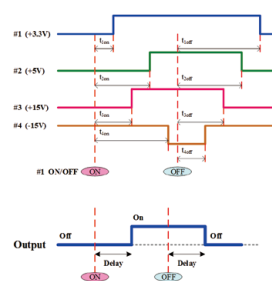
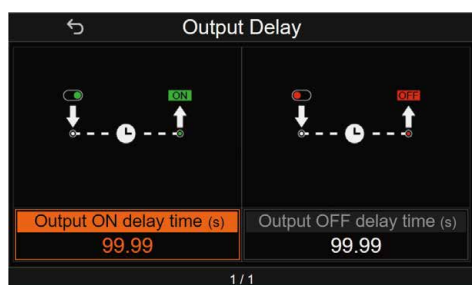
例如, 用户可以选择 15kW 型号和 10kW 型号, 将两者结合起来以达到 25kW 的容量, 所有这些都在他们的预算限制范围内。PHU 最多可连接 10 台机组, 功率可达 150kW, 无需额外配电进行控制。

## D. 多量程输出



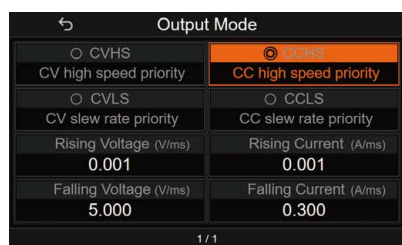
该特征使得电源能够在存在较小电流时自动适应较高的输出电压, 或者在存在较低电压时处理较高的电流。它允许使用单个电源来处理多个电压和电流组合。

## E. 输出 ON/OFF 延迟

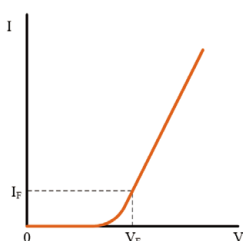


输出 ON/OFF 延迟功能可以设置电源输出打开后, 输出接通的特定时间延迟; 以及电源输出关闭后, 输出关闭的特定时间延迟。

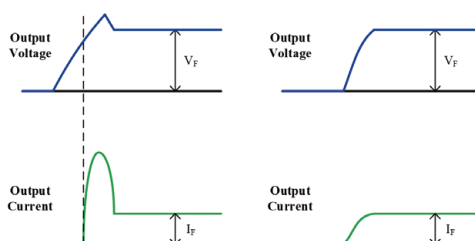
## F. CV/CC 优先



CV 优先

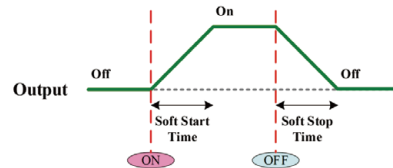
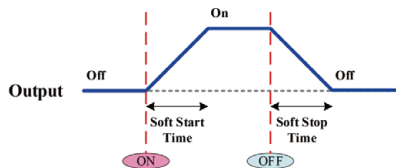
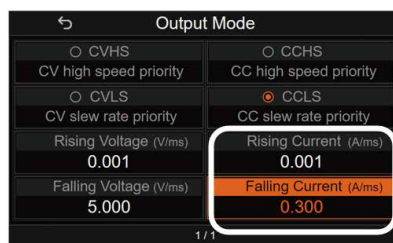
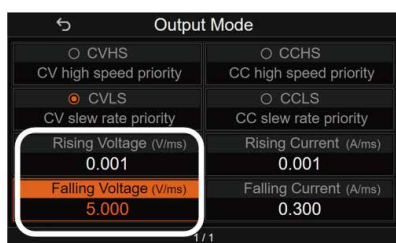


CC 优先



PHU- 系列具有 CV 和 CC 优先模式。CC 优先模式可以防止在导通时产生浪涌电流和浪涌电压，以保护 DUT。

## G. 斜率控制(SOFT START/STOP)

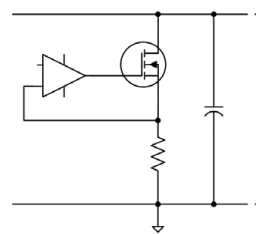
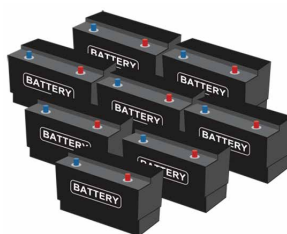
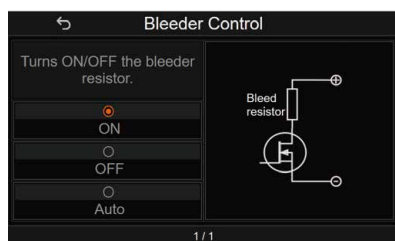


启动 / 停止输出时的电压（或电流）上升速度默认设置为最高速度。PHU 为用户提供了根据应用程序请求设置速度的功能。

在 CVLS 模式下，用户可以设置参数来控制启动输出时的电压上升和停止输出时的电压下降。

在 CCLS 模式下，用户可以设置参数来控制启动输出时的电流上升和停止输出时的电流下降。

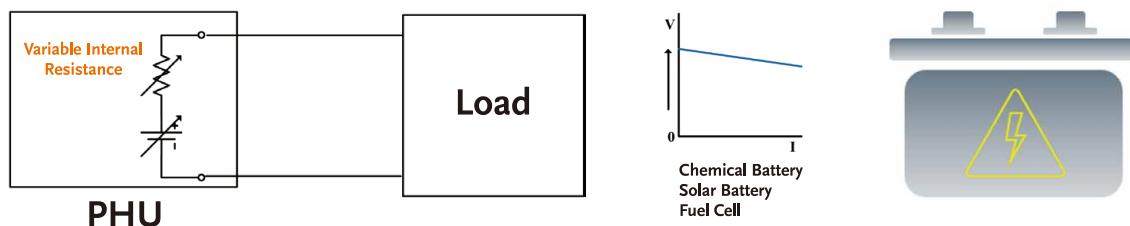
## H. 泄放电路ON/OFF控制



泄放电路是一种电源电路，用于在设备关闭时释放存储在电源滤波电容器中的电荷，以保护 DUT。

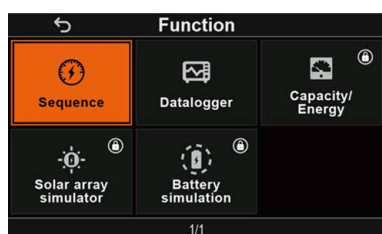
可以出于特定目的禁用泄放功能，例如电池应用。

## I. 内阻可调



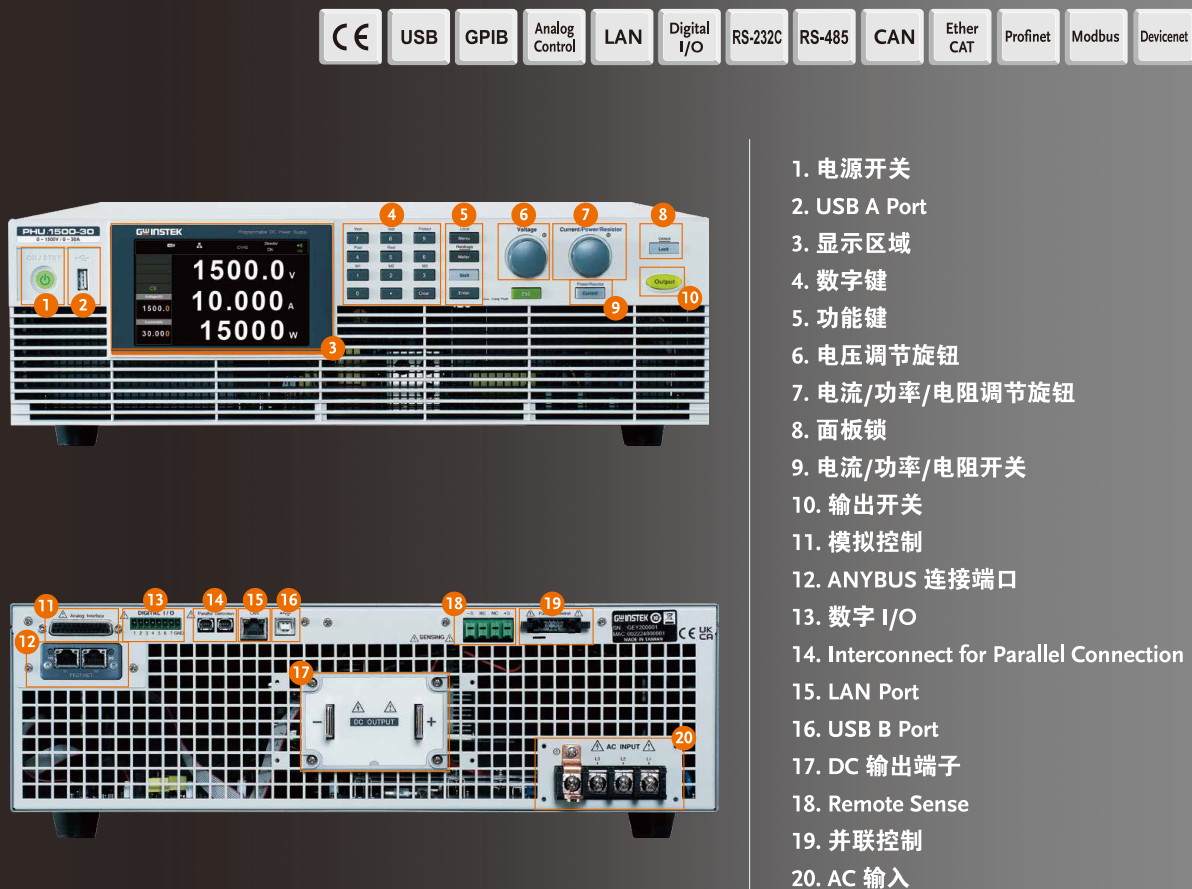
电源的内阻可以在软件中自定义。当设置了内部电阻时，可以将其视为与正输出端子串联的电阻。这样可以模拟具有内阻的电源，例如铅酸电池。

## J. 功能



除了标准的内置可编程序列功能外，PHU 还提供 Datalogger、太阳能电池阵列模拟器、AH/WH 表和电池模拟等多种选配功能，以满足客户的要求。

## 面板介绍



| PHU-5kW 系列规格                               |                        |        |                                                                              |                    |                     |                     |                     |                     |
|--------------------------------------------|------------------------|--------|------------------------------------------------------------------------------|--------------------|---------------------|---------------------|---------------------|---------------------|
| 型号                                         |                        | PHU    | 80-170                                                                       | 200-70             | 500-30              | 750-20              | 1000-15             | 1500-10             |
| 额定输出电压 <sup>(P1)</sup>                     |                        | V      | 80                                                                           | 200                | 500                 | 750                 | 1000                | 1500                |
| 额定输出电流 <sup>(P2)</sup>                     |                        | A      | 170                                                                          | 70                 | 30                  | 20                  | 15                  | 10                  |
| 额定输出功率                                     |                        | W      | 5000                                                                         | 5000               | 5000                | 5000                | 5000                | 5000                |
| 输出功率比                                      |                        | —      | 2.72                                                                         | 2.8                | 3                   | 3                   | 3                   | 3                   |
| 定电压模式                                      |                        |        |                                                                              |                    |                     |                     |                     |                     |
| 电源调整率 <sup>(P3)</sup> [0.01 % of Vo_rated] |                        | mV     | 8                                                                            | 20                 | 50                  | 75                  | 100                 | 150                 |
| 负载调整率 <sup>(P4)</sup> [0.02 % of Vo_rated] |                        | mV     | 16                                                                           | 40                 | 100                 | 150                 | 200                 | 300                 |
| 纹波和噪声 <sup>(P5)</sup>                      | p-p <sup>(P6)</sup>    | mV     | 200                                                                          | 300                | 350                 | 800                 | 1600                | 2400                |
|                                            | r.m.s. <sup>(P7)</sup> | mV     | 16                                                                           | 40                 | 70                  | 200                 | 350                 | 400                 |
| 温度系数                                       |                        | ppm/°C | 100 ppm/°C from rated output voltage, following 30 minutes warm-up.          |                    |                     |                     |                     |                     |
| 远程补偿电压                                     | 5 % of Vo_rated        | V      | 4                                                                            | 10                 | 25                  | 37.5                | 50                  | 75                  |
| 上升时间 <sup>(P8)</sup>                       | Rated load             | ms     | 30                                                                           | 30                 | 30                  | 30                  | 30                  | 30                  |
|                                            | No load                | ms     | 30                                                                           | 30                 | 30                  | 30                  | 30                  | 30                  |
| 下降时间 <sup>(P9)</sup>                       | Rated load             | ms     | 80                                                                           | 80                 | 80                  | 80                  | 80                  | 80                  |
|                                            | No load                | ms     | 1000                                                                         | 1000               | 1000                | 1200                | 1000                | 1200                |
| 瞬态响应时间 <sup>(P10)</sup>                    |                        | ms     | 1.5                                                                          | 1.5                | 1.5                 | 1.5                 | 1.5                 | 1.5                 |
| 定电流模式                                      |                        |        |                                                                              |                    |                     |                     |                     |                     |
| 电源调整率 <sup>(P3)</sup> [0.05 % of Io_rated] |                        | mA     | 85                                                                           | 35                 | 15                  | 10                  | 7.5                 | 5                   |
| 负载调整率 <sup>(P11)</sup> [0.1 % of Io_rated] |                        | mA     | 170                                                                          | 70                 | 30                  | 20                  | 15                  | 10                  |
| 纹波和噪声 <sup>(P12)</sup>                     | r.m.s. <sup>(P7)</sup> | mA     | 170                                                                          | 50                 | 16                  | 16                  | 8                   | 8                   |
| 温度系数                                       |                        | ppm/°C | 100 ppm/°C from rated output current, following 30 minutes warm-up.          |                    |                     |                     |                     |                     |
| 保护功能                                       |                        |        |                                                                              |                    |                     |                     |                     |                     |
| 过电压保护 (OVP)                                | Setting range          | V      | 5.00 V to 88.00 V                                                            | 5.00 V to 220.00 V | 5.00 V to 550.00 V  | 5.0 V to 825.0 V    | 5.0 V to 1100.0 V   | 5.0 V to 1650.0 V   |
|                                            | Setting accuracy       | mV     | 80                                                                           | 200                | 500                 | 750                 | 1000                | 1500                |
| 过电流保护 (OCP)                                | Setting range          | A      | 5.00 A to 187.00 A                                                           | 5.00 A to 77.00 A  | 3.000 A to 33.000 A | 2.000 A to 22.000 A | 1.500 A to 16.500 A | 1.000 A to 11.000 A |
|                                            | Setting accuracy       | mA     | 340                                                                          | 140                | 60                  | 40                  | 30                  | 20                  |
| 过功率保护 (OPP)                                | Setting range          | W      | 100 W to 5500 W                                                              | 100 W to 5500 W    | 100 W to 5500 W     | 100 W to 5500 W     | 100 W to 5500 W     | 100 W to 5500 W     |
|                                            | Setting accuracy       | W      | 50                                                                           | 50                 | 50                  | 50                  | 50                  | 50                  |
| 超电压限制 (OVL)                                | Setting range          | V      | 0.00 V to 84.00 V                                                            | 0.00 V to 210.00 V | 0.00 V to 525.00 V  | 0.0 V to 787.5 V    | 0.0 V to 1050.0 V   | 0.0 V to 1575.0 V   |
| 低电压限制 (UVL)                                | Setting range          | V      | 0.00 V to 84.00 V                                                            | 0.00 V to 210.00 V | 0.00 V to 525.00 V  | 0.0 V to 787.5 V    | 0.0 V to 1050.0 V   | 0.0 V to 1575.0 V   |
| 超电流限制 (OCL)                                | Setting range          | A      | 0.00 A to 178.50 A                                                           | 0.00 A to 73.50 A  | 0.000 A to 31.500 A | 0.000 A to 21.000 A | 0.000 A to 15.750 A | 0.000 A to 10.500 A |
| 低电流限制 (UCL)                                | Setting range          | A      | 0.00 A to 178.50 A                                                           | 0.00 A to 73.50 A  | 0.000 A to 31.500 A | 0.000 A to 21.000 A | 0.000 A to 15.750 A | 0.000 A to 10.500 A |
| 电源装置故障 (PUF)                               | Operation              |        | Turn the output off.                                                         |                    |                     |                     |                     |                     |
| 侦测线路连接不当保护 (SENSE)                         | Operation              |        | Turn the output off.                                                         |                    |                     |                     |                     |                     |
| 低AC输入保护 (AC-FAIL)                          | Operation              |        | Turn the output off.                                                         |                    |                     |                     |                     |                     |
| 关闭 (SD)                                    | Operation              |        | Turn the output off.                                                         |                    |                     |                     |                     |                     |
| 功率限制 (POWER LIMIT)                         | Operation              |        | Over power limit.                                                            |                    |                     |                     |                     |                     |
|                                            | Value (fixed)          |        | Approx. 102 % of rated output power                                          |                    |                     |                     |                     |                     |
| 其他功能                                       |                        |        |                                                                              |                    |                     |                     |                     |                     |
| 电压斜率                                       | Setting range          | V/s    | 0.01 to 160.00                                                               | 0.01 to 400.00     | 0.1 to 1000.0       | 0.1 to 1500.0       | 0.1 to 2000.0       | 0.1 to 3000.0       |
|                                            | Resolution             | mV     | 10                                                                           | 10                 | 100                 | 100                 | 100                 | 100                 |
| 电流斜率                                       | Setting range          | A/s    | 0.01 to 340.00                                                               | 0.01 to 140.00     | 0.001 to 60.000     | 0.001 to 40.000     | 0.001 to 30.000     | 0.001 to 20.000     |
|                                            | Resolution             | mA     | 10                                                                           | 10                 | 1                   | 1                   | 1                   | 1                   |
| 内部电阻                                       | Setting range          | Ω      | 0.000 to 0.471                                                               | 0.000 to 2.857     | 0.00 to 16.67       | 0.00 to 37.50       | 0.0 to 66.7         | 0.0 to 150.0        |
|                                            | Resolution             | mΩ     | 1                                                                            | 1                  | 10                  | 10                  | 100                 | 100                 |
| 前面板                                        |                        |        |                                                                              |                    |                     |                     |                     |                     |
| 显示                                         |                        |        | TFT-LCD, 5", 800 pt x 480 pt                                                 |                    |                     |                     |                     |                     |
| 电压精度 [0.1 % of Vo_rated]                   |                        | mV     | 80                                                                           | 200                | 500                 | 750                 | 1000                | 1500                |
| 电流精度 [0.2 % of Io_rated]                   |                        | mA     | 340                                                                          | 140                | 60                  | 40                  | 30                  | 20                  |
| 功率精度 [1 % of Po_rated]                     |                        | W      | 50                                                                           | 50                 | 50                  | 50                  | 50                  | 50                  |
| 电压分辨率                                      |                        | V      | 0.01                                                                         | 0.01               | 0.01                | 0.1                 | 0.1                 | 0.1                 |
| 电流分辨率                                      |                        | A      | 0.01                                                                         | 0.01               | 0.001               | 0.001               | 0.001               | 0.001               |
| 功率分辨率                                      |                        | W      | 0.1                                                                          | 0.1                | 0.1                 | 0.1                 | 0.1                 | 0.1                 |
| 按钮                                         |                        |        | Menu, Local, Exit, Clear, Enter, Lock, Current, Shift Output, Numeric Keypad |                    |                     |                     |                     |                     |
| 旋钮                                         |                        |        | Turn the knob to increase or decrease the value.                             |                    |                     |                     |                     |                     |
| USB port                                   |                        |        | Type A USB connector                                                         |                    |                     |                     |                     |                     |
| 编程和测量(数字接口)                                |                        |        |                                                                              |                    |                     |                     |                     |                     |
| 输出电压编程范围                                   | 0 % to 105 %           | V      | 0 to 84                                                                      | 0 to 210           | 0 to 525            | 0 to 787.5          | 0 to 1050           | 0 to 1575           |
| 输出电流编程范围                                   | 0 % to 105 %           | A      | 0 to 178.5                                                                   | 0 to 73.5          | 0 to 31.5           | 0 to 21             | 0 to 15.75          | 0 to 10.5           |
| 输出功率编程范围                                   | 0 % to 102 %           | W      | 0 to 5100                                                                    | 0 to 5100          | 0 to 5100           | 0 to 5100           | 0 to 5100           | 0 to 5100           |
| 输出电压编程精度 [0.1 % of Vo_rated]               |                        | mV     | 80                                                                           | 200                | 500                 | 750                 | 1000                | 1500                |
| 输出电流编程精度 [0.2 % of Io_rated]               |                        | mA     | 340                                                                          | 140                | 60                  | 40                  | 30                  | 20                  |
| 输出功率编程精度 [1 % of Po_rated]                 |                        | W      | 50                                                                           | 50                 | 50                  | 50                  | 50                  | 50                  |
| 输出电压编程分辨率                                  |                        | mV     | 10                                                                           | 10                 | 10                  | 100                 | 100                 | 100                 |
| 输出电流编程分辨率                                  |                        | mA     | 10                                                                           | 10                 | 1                   | 1                   | 1                   | 1                   |
| 输出功率编程分辨率                                  |                        | W      | 0.1                                                                          | 0.1                | 0.1                 | 0.1                 | 0.1                 | 0.1                 |
| 输出电压测量精度 [0.1 % of Vo_rated]               |                        | mV     | 80                                                                           | 200                | 500                 | 750                 | 1000                | 1500                |
| 输出电流测量精度 [0.2 % of Io_rated]               |                        | mA     | 340                                                                          | 140                | 60                  | 40                  | 30                  | 20                  |
| 输出功率测量精度 [1 % of Po_rated]                 |                        | W      | 50                                                                           | 50                 | 50                  | 50                  | 50                  | 50                  |

| PHU-5kW 系列规格                                                   |                |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |        |        |        |         |         |
|----------------------------------------------------------------|----------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|---------|---------|
| 型号                                                             |                |    | PHU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 80-170 | 200-70 | 500-30 | 750-20 | 1000-15 | 1500-10 |
| 输出电压测量分辨率                                                      |                |    | mV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10     | 10     | 10     | 100    | 100     | 100     |
| 输出电流测量分辨率                                                      |                |    | mA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10     | 10     | 1      | 1      | 1       | 1       |
| 输出功率测量分辨率                                                      |                |    | W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.1    | 0.1    | 0.1    | 0.1    | 0.1     | 0.1     |
| 输入特性 (PHU-C)                                                   |                |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |        |        |        |         |         |
| 标称输入额定值                                                        |                |    | Single Phase, 3-Phase, 200 V models: 180 Vac to 265 Vac (Covers 200 Vac / 230 Vac)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |        |        |        |         |         |
| 输入频率范围                                                         |                |    | 47 Hz to 63 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |        |        |        |         |         |
| 最大输入电流                                                         | 200 Vac        | A  | 32 A (L1, L2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |        |        |        |        |         |         |
| 浪涌电流                                                           | 200 Vac        | A  | Less than 50 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |        |        |        |         |         |
| 最大输入功率                                                         |                |    | VA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 6000   |        |        |        |         |         |
| 功率因数                                                           | Rated Power    |    | > 0.95                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |        |        |        |         |         |
| 效率 <sup>(*)4</sup>                                             | 200 Vac        | %  | 86 to 94                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |        |        |        |         |         |
| Hold-up 时间                                                     |                |    | 10 ms or greater                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |        |        |        |         |         |
| 输入特性 (PHU-D)                                                   |                |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |        |        |        |         |         |
| 标称输入额定值                                                        |                |    | 3-Phase, 400 V models: 342 Vac to 528 Vac (Covers 380/400/415/440/460/480 Vac)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |        |        |        |         |         |
| 输入频率范围                                                         |                |    | 47 Hz to 63 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |        |        |        |         |         |
| 最大输入电流                                                         | 400 Vac        | A  | 16 A (L1, L2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |        |        |        |        |         |         |
| 浪涌电流                                                           | 400 Vac        | A  | Less than 25 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |        |        |        |         |         |
| 最大输入功率                                                         |                |    | VA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 6000   |        |        |        |         |         |
| 功率因数                                                           | Rated Power    |    | > 0.95                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |        |        |        |         |         |
| 效率 <sup>(*)4</sup>                                             | 400 Vac        | %  | 87 to 94                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |        |        |        |         |         |
| Hold-up 时间                                                     |                |    | 10 ms or greater                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |        |        |        |         |         |
| 接口功能                                                           |                |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |        |        |        |         |         |
| USB<br>LAN                                                     |                |    | Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB Class: CDC(Communications Device Class)<br>MAC Address, DNS IP Address, User Password, Gateway IP Address, Instrument IP Address, Subnet Mask                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |        |        |        |         |         |
| 隔离模拟控制接口<br>工厂选配                                               |                |    | Vset / Iset = 0 V to 5 V or 0 V to 10 V   Vmon / Imon = 0 V to 5 V or 0 V to 10 V<br>RS-232&485 or GPIB or CAN Bus or DeviceNet or Isolated Digital I/O                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |        |        |        |         |         |
| 隔离模拟控制接口                                                       |                |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |        |        |        |         |         |
| Vout 电压编程<br>Iout 电压编程<br>Pout 电压编程<br>Internal resistance电压编程 |                |    | 0 % to 100 %, 0 V to 5 V Accuracy: ± 1 % of rated Vout, or 0 V to 10 V Accuracy: ± 1 % of rated Vout<br>0 % to 100%, 0 V to 5 V Accuracy: ± 1 % of rated Iout, or 0 V to 10 V Accuracy: ± 1 % of rated Iout<br>0 % to 100%, 0 V to 5 V Accuracy: ± 1 % of rated Pout, or 0 V to 10 V Accuracy: ± 1 % of rated Pout<br>0 % to 100%, 0 V to 5 V Accuracy: ± 1 % of maximum Rint,<br>or 0 V to 10 V Accuracy: ± 1 % of maximum Rint<br>0 V to 5 V or 0 V to 10 V, Accuracy: ± 1 %.<br>0 V to 5 V or 0 V to 10 V, Accuracy: ± 1 %.<br>Voltage reference for 0 V to 5V or 0 V to 10V.<br>Turn off the PHU output with a High (4.5 V to 5 V) |        |        |        |        |         |         |
| 输出电压监测器<br>输出电流压监测器<br>参考电压<br>警报输入                            |                |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |        |        |        |         |         |
| 输出on/off控制                                                     |                |    | Possible logic selections:<br>Turn the output on using a LOW (0 V to 0.5 V) or short-circuit,<br>turn the output off using a HIGH (4.5 V to 5 V) or open-circuit.<br>Turn the output on using a HIGH (4.5 V to 5 V) or open-circuit,<br>turn the output off using a LOW (0 V to 0.5 V) or short-circuit.                                                                                                                                                                                                                                                                                                                               |        |        |        |        |         |         |
| 警报清除控制<br>CV/CC/CP/ALM/PWR ON/OUT ON indicator                 |                |    | Clear alarms with a High (4.5 V to 5 V)<br>Photocoupler open collector output; Maximum voltage 30 V, maximum sink current 8 mA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |        |        |        |         |         |
| 环境条件                                                           |                |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |        |        |        |         |         |
| 工作温度<br>存储温度<br>工作湿度<br>存储湿度<br>海拔                             |                |    | 0 °C to 50 °C<br>-25 °C ~ 70 °C<br>20 % to 85 % RH; No condensation<br>90 % RH or less; No condensation<br>Maximum 2000 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |        |        |        |         |         |
| 一般规格                                                           |                |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |        |        |        |         |         |
| 重量                                                             | main unit only | kg | Less than 21 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |        |        |        |         |         |
| 尺寸 (W×H×D)                                                     |                | mm | 442 mm × 130 mm × 675 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |        |        |        |         |         |
| 冷却<br>EMC<br>安全<br>耐压<br><br>绝缘电阻                              |                |    | Forced air cooling by internal fan<br>Complies with the European EMC directive 89/336/EEC for Class A test and measurement products<br>Complies with the European Low Voltage Directive 73/23/EEC and carries the CE-marking<br>Chassis and output terminal; chassis and AC input;<br>AC input and output terminal: AC 1500 V or DC 2130 V 1 minute<br>Chassis and output terminal; chassis and AC input;<br>AC input and output terminal: 100 MΩ or more (DC 500 V)                                                                                                                                                                   |        |        |        |        |         |         |

注意:

- (\*)1 最小电压保证为最大额定输出电压的0.2 %。
- (\*)2 最小电流保证为最大额定输出电流的0.4 %。
- (\*)3 在180 ~ 265 Vac或 342 ~ 528 Vac下, 固定负载。
- (\*)4 从空载到满载, 输入电压固定。在侦测点测量(远程补偿)。
- (\*)5 80 V, 200 V : 用JEITA RC-9131B (1:1)探头测量。  
500 V, 750 V, 1000 V和1500 V : 用 (100:1) 探头测量。
- (\*)6 测量频率带宽为10 Hz至20 MHz。
- (\*)7 测量频率带宽为5 Hz-1 MHz。
- (\*)8 额定输出电压的10 %至90 %, 带额定电阻负载。
- (\*)9 额定输出电压的90 %至10 %, 带额定电阻负载。

- (\*)10 当负载从其额定输出电流的10 %变化到90 %时, 输出电压恢复到其额定输出的1 %以内的时间。额定输出10 %至100 %的电压设定值。
- (\*)11 对于负载电压变化, 等于单位额定电压, 固定输入电压。
- (\*)12 纹波是在20 ~ 100 %的输出电压和全输出电流下测量的。
- (\*)13 输出功率变化范围为10~90 %, 输入电压固定。
- (\*)14 在额定输出功率下。

| PHU-10 kW 系列规格                             |                        |        |                                                                              |                    |                    |                     |                     |                     |
|--------------------------------------------|------------------------|--------|------------------------------------------------------------------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| 型号                                         |                        | PHU    | 80-340                                                                       | 200-140            | 500-60             | 750-40              | 1000-30             | 1500-20             |
| 额定输出电压 <sup>(P1)</sup>                     |                        | V      | 80                                                                           | 200                | 500                | 750                 | 1000                | 1500                |
| 额定输出电流 <sup>(P2)</sup>                     |                        | A      | 340                                                                          | 140                | 60                 | 40                  | 30                  | 20                  |
| 额定输出功率                                     |                        | W      | 10000                                                                        | 10000              | 10000              | 10000               | 10000               | 10000               |
| 输出功率比                                      |                        | —      | 2.72                                                                         | 2.8                | 3                  | 3                   | 3                   | 3                   |
| 定电压模式                                      |                        |        |                                                                              |                    |                    |                     |                     |                     |
| 电源调整率 <sup>(P3)</sup> [0.01 % of Vo_rated] |                        | mV     | 8                                                                            | 20                 | 50                 | 75                  | 100                 | 150                 |
| 负载调整率 <sup>(P4)</sup> [0.02 % of Vo_rated] |                        | mV     | 16                                                                           | 40                 | 100                | 150                 | 200                 | 300                 |
| 纹波和噪声 <sup>(P5)</sup>                      | p-p <sup>(P6)</sup>    | mV     | 200                                                                          | 300                | 350                | 800                 | 1600                | 2400                |
|                                            | r.m.s. <sup>(P7)</sup> | mV     | 16                                                                           | 40                 | 70                 | 200                 | 350                 | 400                 |
| 温度系数                                       |                        | ppm/°C | 100 ppm/°C from rated output voltage, following 30 minutes warm-up.          |                    |                    |                     |                     |                     |
| 远程补偿电压                                     | 5 % of Vo_rated        | V      | 4                                                                            | 10                 | 25                 | 37.5                | 50                  | 75                  |
| 上升时间 <sup>(P8)</sup>                       | Rated load             | ms     | 30                                                                           | 30                 | 30                 | 30                  | 30                  | 30                  |
|                                            | No load                | ms     | 30                                                                           | 30                 | 30                 | 30                  | 30                  | 30                  |
| 下降时间 <sup>(P9)</sup>                       | Rated load             | ms     | 80                                                                           | 80                 | 80                 | 80                  | 80                  | 80                  |
|                                            | No load                | ms     | 1000                                                                         | 1000               | 1000               | 1200                | 1000                | 1200                |
| 瞬态响应时间 <sup>(P10)</sup>                    |                        | ms     | 1.5                                                                          | 1.5                | 1.5                | 1.5                 | 1.5                 | 1.5                 |
| 定电流模式                                      |                        |        |                                                                              |                    |                    |                     |                     |                     |
| 电源调整率 <sup>(P3)</sup> [0.05 % of Io_rated] |                        | mA     | 170                                                                          | 70                 | 30                 | 20                  | 15                  | 10                  |
| 负载调整率 <sup>(P11)</sup> [0.1 % of Io_rated] |                        | mA     | 340                                                                          | 140                | 60                 | 40                  | 30                  | 20                  |
| 纹波和噪声 <sup>(P12)</sup>                     | r.m.s. <sup>(P7)</sup> | mA     | 340                                                                          | 100                | 32                 | 32                  | 22                  | 22                  |
| 温度系数                                       |                        | ppm/°C | 100 ppm/°C from rated output current, following 30 minutes warm-up.          |                    |                    |                     |                     |                     |
| 保护功能                                       |                        |        |                                                                              |                    |                    |                     |                     |                     |
| 过电压保护 (OVP)                                | Setting range          | V      | 5.00 V to 88.00 V                                                            | 5.00 V to 220.00 V | 5.00 V to 550.00 V | 5.0 V to 825.0 V    | 5.0 V to 1100.0 V   | 5.0 V to 1650.0 V   |
|                                            | Setting accuracy       | mV     | 80                                                                           | 200                | 500                | 750                 | 1000                | 1500                |
| 过电流保护 (OCP)                                | Setting range          | A      | 5.00 A to 374.00 A                                                           | 5.00 A to 154.00 A | 5.00 A to 66.00 A  | 4.000 A to 44.000 A | 3.000 A to 33.000 A | 2.000 A to 22.000 A |
|                                            | Setting accuracy       | mA     | 680                                                                          | 280                | 120                | 80                  | 60                  | 40                  |
| 过功率保护 (OPP)                                | Setting range          | W      | 200 W to 11000 W                                                             | 200 W to 11000 W   | 200 W to 11000 W   | 200 W to 11000 W    | 200 W to 11000 W    | 200 W to 11000 W    |
|                                            | Setting accuracy       | W      | 100                                                                          | 100                | 100                | 100                 | 100                 | 100                 |
| 超电压限制 (OVL)                                | Setting range          | V      | 0.00 V to 84.00 V                                                            | 0.00 V to 210.00 V | 0.00 V to 525.00 V | 0.0 V to 787.5 V    | 0.0 V to 1050.0 V   | 0.0 V to 1575.0 V   |
| 低电压限制 (UVL)                                | Setting range          | V      | 0.00 V to 84.00 V                                                            | 0.00 V to 210.00 V | 0.00 V to 525.00 V | 0.0 V to 787.5 V    | 0.0 V to 1050.0 V   | 0.0 V to 1575.0 V   |
| 超电流限制 (OCL)                                | Setting range          | A      | 0.00 A to 357.00 A                                                           | 0.00 A to 147.00 A | 0.00 A to 63.00 A  | 0.000 A to 42.000 A | 0.000 A to 31.500 A | 0.000 A to 21.000 A |
| 低电流限制 (UCL)                                | Setting range          | A      | 0.00 A to 357.00 A                                                           | 0.00 A to 147.00 A | 0.00 A to 63.00 A  | 0.000 A to 42.000 A | 0.000 A to 31.500 A | 0.000 A to 21.000 A |
| 电源装置故障 (PUF)                               | Operation              |        | Turn the output off.                                                         |                    |                    |                     |                     |                     |
| 侦测线路连接不当保护 (SENSE)                         | Operation              |        | Turn the output off.                                                         |                    |                    |                     |                     |                     |
| 低AC输入保护 (AC-FAIL)                          | Operation              |        | Turn the output off.                                                         |                    |                    |                     |                     |                     |
| 关闭 (SD)                                    | Operation              |        | Turn the output off.                                                         |                    |                    |                     |                     |                     |
| 功率限制 (POWER LIMIT)                         | Operation              |        | Over power limit.                                                            |                    |                    |                     |                     |                     |
|                                            | Value (fixed)          |        | Approx. 102 % of rated output power                                          |                    |                    |                     |                     |                     |
| 其他功能                                       |                        |        |                                                                              |                    |                    |                     |                     |                     |
| 电压斜率                                       | Setting range          | V/s    | 0.01 to 160.00                                                               | 0.01 to 400.00     | 0.1 to 1000.0      | 0.1 to 1500.0       | 0.1 to 2000.0       | 0.1 to 3000.0       |
|                                            | Resolution             | mV     | 10                                                                           | 10                 | 100                | 100                 | 100                 | 100                 |
| 电流斜率                                       | Setting range          | A/s    | 0.1 to 680.0                                                                 | 0.01 to 280.00     | 0.01 to 120.00     | 0.01 to 80.00       | 0.001 to 60.000     | 0.001 to 40.000     |
|                                            | Resolution             | mA     | 100                                                                          | 10                 | 10                 | 10                  | 1                   | 1                   |
| 内部电阻                                       | Setting range          | Ω      | 0.000 to 0.235                                                               | 0.000 to 1.428     | 0.00 to 8.33       | 0.00 to 18.75       | 0.00 to 33.33       | 0.0 to 75.0         |
|                                            | Resolution             | mΩ     | 1                                                                            | 1                  | 10                 | 10                  | 10                  | 100                 |
| 前面板                                        |                        |        |                                                                              |                    |                    |                     |                     |                     |
| 显示                                         |                        |        | TFT-LCD, 5", 800 pt x 480 pt                                                 |                    |                    |                     |                     |                     |
| 电压精度 [0.1 % of Vo_rated]                   |                        | mV     | 80                                                                           | 200                | 500                | 750                 | 1000                | 1500                |
| 电流精度 [0.2 % of Io_rated]                   |                        | mA     | 680                                                                          | 280                | 120                | 80                  | 60                  | 40                  |
| 功率精度 [1 % of Po_rated]                     |                        | W      | 100                                                                          | 100                | 100                | 100                 | 100                 | 100                 |
| 电压分辨率                                      |                        | V      | 0.01                                                                         | 0.01               | 0.01               | 0.1                 | 0.1                 | 0.1                 |
| 电流分辨率                                      |                        | A      | 0.01                                                                         | 0.01               | 0.001              | 0.001               | 0.001               | 0.001               |
| 功率分辨率                                      |                        | W      | 1                                                                            | 1                  | 1                  | 1                   | 1                   | 1                   |
| 按钮                                         |                        |        | Menu, Local, Exit, Clear, Enter, Lock, Current, Shift Output, Numeric Keypad |                    |                    |                     |                     |                     |
| 旋钮                                         |                        |        | Turn the knob to increase or decrease the value                              |                    |                    |                     |                     |                     |
| USB port                                   |                        |        | Type A USB connector                                                         |                    |                    |                     |                     |                     |
| 编程和测量(数字接口)                                |                        |        |                                                                              |                    |                    |                     |                     |                     |
| 输出电压编程范围                                   | 0 % to 105 %           | V      | 0 to 84                                                                      | 0 to 210           | 0 to 525           | 0 to 787.5          | 0 to 1050           | 0 to 1575           |
| 输出电流编程范围                                   | 0 % to 105 %           | A      | 0 to 357                                                                     | 0 to 147           | 0 to 63            | 0 to 42             | 0 to 31.5           | 0 to 21             |
| 输出功率编程范围                                   | 0 % to 102 %           | W      | 0 to 10200                                                                   | 0 to 10200         | 0 to 10200         | 0 to 10200          | 0 to 10200          | 0 to 10200          |
| 输出电压编程精度 [0.1 % of Vo_rated]               |                        | mV     | 80                                                                           | 200                | 500                | 750                 | 1000                | 1500                |
| 输出电流编程精度 [0.2 % of Io_rated]               |                        | mA     | 680                                                                          | 280                | 120                | 80                  | 60                  | 40                  |
| 输出功率编程精度 [1 % of Po_rated]                 |                        | W      | 100                                                                          | 100                | 100                | 100                 | 100                 | 100                 |
| 输出电压编程分辨率                                  |                        | mV     | 10                                                                           | 10                 | 10                 | 100                 | 100                 | 100                 |
| 输出电流编程分辨率                                  |                        | mA     | 10                                                                           | 10                 | 1                  | 1                   | 1                   | 1                   |
| 输出功率编程分辨率                                  |                        | W      | 1                                                                            | 1                  | 1                  | 1                   | 1                   | 1                   |
| 输出电压测量精度 [0.1 % of Vo_rated]               |                        | mV     | 80                                                                           | 200                | 500                | 750                 | 1000                | 1500                |
| 输出电流测量精度 [0.2 % of Io_rated]               |                        | mA     | 680                                                                          | 280                | 120                | 80                  | 60                  | 40                  |
| 输出功率测量精度 [1 % of Po_rated]                 |                        | W      | 100                                                                          | 100                | 100                | 100                 | 100                 | 100                 |

| PHU-10 kW 系列规格                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |        |        |         |         |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------|--------|---------|---------|
| 型号                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | PHU | 80-340                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 200-140 | 500-60 | 750-40 | 1000-30 | 1500-20 |
| 输出电压测量分辨率                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | mV  | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10      | 10     | 100    | 100     | 100     |
| 输出电流测量分辨率                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | mA  | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10      | 1      | 1      | 1       | 1       |
| 输出功率测量分辨率                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | W   | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1       | 1      | 1      | 1       | 1       |
| 输入特性 (PHU-C)                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |        |        |         |         |
| 标称输入额定值                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     | 3-Phase, 200 V models: 180 Vac to 265 Vac (Covers 200 Vac / 230 Vac)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |        |        |         |         |
| 输入频率范围                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     | 47 Hz to 63 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |        |        |         |         |
| 最大输入电流                                                         | 200 Vac                                                                                                                                                                                                                                                                                                                                                                                                                                                              | A   | 56 A (L1), 32 A (L2, L3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |        |        |         |         |
| 浪涌电流                                                           | 200 Vac                                                                                                                                                                                                                                                                                                                                                                                                                                                              | A   | Less than 100 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |        |        |         |         |
| 最大输入功率                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | VA  | 12000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |        |        |         |         |
| 功率因数                                                           | Rated Power                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     | > 0.95                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |        |        |         |         |
| 效率 <sup>(*)4</sup>                                             | 200 Vac                                                                                                                                                                                                                                                                                                                                                                                                                                                              | %   | 86 to 94                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |        |        |         |         |
| Hold-up 时间                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     | 10 ms or greater                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |        |        |         |         |
| 输入特性 (PHU-D)                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |        |        |         |         |
| 标称输入额定值                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     | 3-Phase, 400 V models: 342 Vac to 528 Vac (Covers 380/400/415/440/460/480 Vac)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |        |        |         |         |
| 输入频率范围                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     | 47 Hz to 63 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |        |        |         |         |
| 最大输入电流                                                         | 400 Vac                                                                                                                                                                                                                                                                                                                                                                                                                                                              | A   | 28 A (L1), 16 A (L2, L3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |        |        |         |         |
| 浪涌电流                                                           | 400 Vac                                                                                                                                                                                                                                                                                                                                                                                                                                                              | A   | Less than 50 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |        |        |         |         |
| 最大输入功率                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | VA  | 12000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |        |        |         |         |
| 功率因数                                                           | Rated Power                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     | > 0.95                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |        |        |         |         |
| 效率 <sup>(*)4</sup>                                             | 400 Vac                                                                                                                                                                                                                                                                                                                                                                                                                                                              | %   | 87 to 94                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |        |        |         |         |
| Hold-up 时间                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     | 10 ms or greater                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |        |        |         |         |
| 接口功能                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |        |        |         |         |
| USB<br>LAN                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     | Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB Class: CDC(Communications Device Class)<br>MAC Address, DNS IP Address, User Password, Gateway IP Address, Instrument IP Address, Subnet Mask                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |        |        |         |         |
| 隔离模拟控制接口<br>工厂选配                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     | Vset / Iset = 0 V to 5 V or 0 V to 10 V   Vmon / Imon = 0 V to 5 V or 0 V to 10 V<br>RS-232&485 or GPIB or CAN Bus or DeviceNet or Isolated Digital I/O                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |        |        |         |         |
| 隔离模拟控制接口                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |        |        |         |         |
| Vout 电压编程<br>Iout 电压编程<br>Pout 电压编程<br>Internal resistance电压编程 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     | 0 % to 100 %, 0V to 5 V Accuracy: ± 1 % of rated Vout, or 0 V to 10 V Accuracy: ± 1 % of rated Vout<br>0 % to 100 %, 0 V to 5 V Accuracy: ± 1 % of rated Iout, or 0 V to 10 V Accuracy: ± 1 % of rated Iout<br>0 % to 100 %, 0 V to 5 V Accuracy: ± 1 % of rated Pout, or 0 V to 10 V Accuracy: ± 1 % of rated Pout<br>0 % to 100 %, 0 V to 5 V Accuracy: ± 1 % of maximum Rint,<br>or 0 V to 10 V Accuracy: ± 1 % of maximum Rint<br>0 V to 5 V or 0 V to 10 V, Accuracy: ± 1 %.<br>0 V to 5 V or 0 V to 10 V, Accuracy: ± 1 %.<br>Voltage reference for 0 V to 5V or 0 V to 10V.<br>Turn off the PHU output with a High (4.5 V to 5 V) |         |        |        |         |         |
| 输出电压监测器<br>输出电流压监测器<br>参考电压<br>警报输入                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |        |        |         |         |
| 输出on/off控制                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     | Possible logic selections:<br>Turn the output on using a LOW (0 V to 0.5 V) or short-circuit,<br>turn the output off using a HIGH (4.5 V to 5 V) or open-circuit.<br>Turn the output on using a HIGH (4.5 V to 5 V) or open-circuit,<br>turn the output off using a LOW (0V to 0.5 V) or short-circuit.                                                                                                                                                                                                                                                                                                                                  |         |        |        |         |         |
| 警报清除控制<br>CV/CC/CP/ALM/PWR ON/OUT ON indicator                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     | Clear alarms with a High (4.5 V to 5 V)<br>Photocoupler open collector output; Maximum voltage 30 V, maximum sink current 8 mA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |        |        |         |         |
| 环境条件                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |        |        |         |         |
| 工作温度<br>存储温度<br>工作湿度<br>存储湿度<br>海拔                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     | 0 °C to 50 °C<br>-25 °C ~ 70 °C<br>20 % to 85 % RH; No condensation<br>90 % RH or less; No condensation<br>Maximum 2000 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |        |        |         |         |
| 一般规格                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |        |        |         |         |
| 重量                                                             | main unit only                                                                                                                                                                                                                                                                                                                                                                                                                                                       | kg  | Less than 30.5 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |        |        |         |         |
| 尺寸 (W×H×D)                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | mm  | 442 mm × 130 mm × 675 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |        |        |         |         |
| 冷却<br>EMC<br>安全<br>耐压<br><br>绝缘电阻                              | Forced air cooling by internal fan<br>Complies with the European EMC directive 89/336/EEC for Class A test and measurement products<br>Complies with the European Low Voltage Directive 73/23/EEC and carries the CE-marking<br>Chassis and output terminal; chassis and AC input;<br>AC input and output terminal: AC 1500 V or DC 2130 V 1 minute<br>Chassis and output terminal; chassis and AC input;<br>AC input and output terminal: 100 MΩ or more (DC 500 V) |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |        |        |         |         |

注意:

- (\*)1 最小电压保证为最大额定输出电压的0.2 %。
- (\*)2 最小电流保证为最大额定输出电流的0.4 %。
- (\*)3 在180 ~ 265 Vac或 342 ~ 528 Vac下, 固定负载。
- (\*)4 从空载到满载, 输入电压固定。在侦测点测量(远程补偿)。
- (\*)5 80 V, 200 V : 用JEITA RC-9131B (1:1)探头测量。  
500 V, 750 V, 1000 V和1500 V : 用 (100:1) 探头测量。
- (\*)6 测量频率带宽为10 Hz至20 MHz。
- (\*)7 测量频率带宽为5 Hz-1 MHz。
- (\*)8 额定输出电压的10 %至90 %, 带额定电阻负载。
- (\*)9 额定输出电压的90 %至10 %, 带额定电阻负载。

- (\*)10 当负载从其额定输出电流的10 %变化到90 %时, 输出电压恢复至其额定输出的1 %以内的时间。  
额定输出10 %至100 %的电压设定值。
- (\*)11 对于负载电压变化, 等于单位额定电压, 固定输入电压。
- (\*)12 纹波是在20 ~ 100 %的输出电压和全输出电流下测量的。
- (\*)13 输出功率变化范围为10~90 %, 输入电压固定。
- (\*)14 在额定输出功率下。

| PHU-15 kW 系列规格                             |                        |        |                                                                              |                    |                    |                   |                     |                     |
|--------------------------------------------|------------------------|--------|------------------------------------------------------------------------------|--------------------|--------------------|-------------------|---------------------|---------------------|
| 型号                                         |                        | PHU    | 80-510                                                                       | 200-210            | 500-90             | 750-60            | 1000-45             | 1500-30             |
| 额定输出电压 <sup>(P1)</sup>                     |                        | V      | 80                                                                           | 200                | 500                | 750               | 1000                | 1500                |
| 额定输出电流 <sup>(P2)</sup>                     |                        | A      | 510                                                                          | 210                | 90                 | 60                | 45                  | 30                  |
| 额定输出功率                                     |                        | W      | 15000                                                                        | 15000              | 15000              | 15000             | 15000               | 15000               |
| 输出功率比                                      |                        | —      | 2.72                                                                         | 2.8                | 3                  | 3                 | 3                   | 3                   |
| 定电压模式                                      |                        |        |                                                                              |                    |                    |                   |                     |                     |
| 电源调整率 <sup>(P3)</sup> [0.01 % of Vo_rated] |                        | mV     | 8                                                                            | 20                 | 50                 | 75                | 100                 | 150                 |
| 负载调整率 <sup>(P4)</sup> [0.02 % of Vo_rated] |                        | mV     | 16                                                                           | 40                 | 100                | 150               | 200                 | 300                 |
| 纹波和噪声 <sup>(P5)</sup>                      | p-p <sup>(P6)</sup>    | mV     | 200                                                                          | 300                | 350                | 800               | 1600                | 2400                |
|                                            | r.m.s. <sup>(P7)</sup> | mV     | 16                                                                           | 40                 | 70                 | 200               | 350                 | 400                 |
| 温度系数                                       |                        | ppm/°C | 100 ppm/°C from rated output voltage, following 30 minutes warm-up.          |                    |                    |                   |                     |                     |
| 远程补偿电压                                     | 5 % of Vo_rated        | V      | 4                                                                            | 10                 | 25                 | 37.5              | 50                  | 75                  |
| 上升时间 <sup>(P8)</sup>                       | Rated load             | ms     | 30                                                                           | 30                 | 30                 | 30                | 30                  | 30                  |
|                                            | No load                | ms     | 30                                                                           | 30                 | 30                 | 30                | 30                  | 30                  |
| 下降时间 <sup>(P9)</sup>                       | Rated load             | ms     | 80                                                                           | 80                 | 80                 | 80                | 80                  | 80                  |
|                                            | No load                | ms     | 1000                                                                         | 1000               | 1000               | 1200              | 1000                | 1200                |
| 瞬态响应时间 <sup>(P10)</sup>                    |                        | ms     | 1.5                                                                          | 1.5                | 1.5                | 1.5               | 1.5                 | 1.5                 |
| 定电流模式                                      |                        |        |                                                                              |                    |                    |                   |                     |                     |
| 电源调整率 <sup>(P3)</sup> [0.05 % of Io_rated] |                        | mA     | 255                                                                          | 105                | 45                 | 30                | 22.5                | 15                  |
| 负载调整率 <sup>(P11)</sup> [0.1 % of Io_rated] |                        | mA     | 510                                                                          | 210                | 90                 | 60                | 45                  | 30                  |
| 纹波和噪声 <sup>(P12)</sup>                     | r.m.s. <sup>(P7)</sup> | mA     | 510                                                                          | 150                | 48                 | 48                | 26                  | 26                  |
| 温度系数                                       |                        | ppm/°C | 100 ppm/°C from rated output current, following 30 minutes warm-up.          |                    |                    |                   |                     |                     |
| 保护功能                                       |                        |        |                                                                              |                    |                    |                   |                     |                     |
| 过电压保护 (OVP)                                | Setting range          | V      | 5.00 V to 88.00 V                                                            | 5.00 V to 220.00 V | 5.00 V to 550.00 V | 5.0 V to 825.0 V  | 5.0 V to 1100.0 V   | 5.0 V to 1650.0 V   |
|                                            | Setting accuracy       | mV     | 80                                                                           | 200                | 500                | 750               | 1000                | 1500                |
| 过电流保护 (OCP)                                | Setting range          | A      | 5.00 A to 561.00 A                                                           | 5.00 A to 231.00 A | 5.00 A to 99.00 A  | 5.00 A to 66.00 A | 4.5 A to 49.500 A   | 3 A to 33.000 A     |
|                                            | Setting accuracy       | mA     | 1020                                                                         | 420                | 180                | 120               | 90                  | 60                  |
| 过功率保护 (OPP)                                | Setting range          | W      | 300 W to 16500 W                                                             | 300 W to 16500 W   | 300 W to 16500 W   | 300 W to 16500 W  | 300 W to 16500 W    | 300 W to 16500 W    |
|                                            | Setting accuracy       | W      | 150                                                                          | 150                | 150                | 150               | 150                 | 150                 |
| 超电压限制 (OVL)                                | Setting range          | V      | 0.00 V to 84.00 V                                                            | 0.00 V to 210.00 V | 0.00 V to 525.00 V | 0.0 V to 787.5 V  | 0.0 V to 1050.0 V   | 0.0 V to 1575.0 V   |
| 低电压限制 (UVL)                                | Setting range          | V      | 0.00 V to 84.00 V                                                            | 0.00 V to 210.00 V | 0.00 V to 525.00 V | 0.0 V to 787.5 V  | 0.0 V to 1050.0 V   | 0.0 V to 1575.0 V   |
| 超电流限制 (OCL)                                | Setting range          | A      | 0.00 A to 535.50 A                                                           | 0.00 A to 220.50 A | 0.00 A to 94.50 A  | 0.00 A to 63.00 A | 0.000 A to 47.250 A | 0.000 A to 31.500 A |
| 低电流限制 (UCL)                                | Setting range          | A      | 0.00 A to 535.50 A                                                           | 0.00 A to 220.50 A | 0.00 A to 94.50 A  | 0.00 A to 63.00 A | 0.000 A to 47.250 A | 0.000 A to 31.500 A |
| 电源装置故障 (PUF)                               | Operation              |        | Turn the output off.                                                         |                    |                    |                   |                     |                     |
| 侦测线路连接不当保护 (SENSE)                         | Operation              |        | Turn the output off.                                                         |                    |                    |                   |                     |                     |
| 低AC输入保护 (AC-FAIL)                          | Operation              |        | Turn the output off.                                                         |                    |                    |                   |                     |                     |
| 关闭 (SD)                                    | Operation              |        | Turn the output off.                                                         |                    |                    |                   |                     |                     |
| 功率限制 (POWER LIMIT)                         | Operation              |        | Over power limit.                                                            |                    |                    |                   |                     |                     |
|                                            | Value (fixed)          |        | Approx. 102 % of rated output power                                          |                    |                    |                   |                     |                     |
| 其他功能                                       |                        |        |                                                                              |                    |                    |                   |                     |                     |
| 电压斜率                                       | Setting range          | V/s    | 0.01 to 160.00                                                               | 0.01 to 400.00     | 0.1 to 1000.0      | 0.1 to 1500.0     | 0.1 to 2000.0       | 0.1 to 3000.0       |
|                                            | Resolution             | mV     | 10                                                                           | 10                 | 100                | 100               | 100                 | 100                 |
| 电流斜率                                       | Setting range          | A/s    | 0.1 to 1020.0                                                                | 0.01 to 420.00     | 0.01 to 180.00     | 0.01 to 120.00    | 0.01 to 90.00       | 0.001 to 60.000     |
|                                            | Resolution             | mA     | 100                                                                          | 10                 | 10                 | 10                | 10                  | 1                   |
| 内部电阻                                       | Setting range          | Ω      | 0.000 to 0.157                                                               | 0.00 to 0.95       | 0.00 to 5.56       | 0.00 to 12.50     | 0.00 to 22.22       | 0.0 to 50.0         |
|                                            | Resolution             | mΩ     | 1                                                                            | 10                 | 10                 | 10                | 10                  | 100                 |
| 前面板                                        |                        |        |                                                                              |                    |                    |                   |                     |                     |
| 显示                                         |                        |        | TFT-LCD, 5", 800 pt x 480 pt                                                 |                    |                    |                   |                     |                     |
| 电压精度 [0.1 % of Vo_rated]                   |                        | mV     | 80                                                                           | 200                | 500                | 750               | 1000                | 1500                |
| 电流精度 [0.2 % of Io_rated]                   |                        | mA     | 1020                                                                         | 420                | 180                | 120               | 90                  | 60                  |
| 功率精度 [1 % of Po_rated]                     |                        | W      | 150                                                                          | 150                | 150                | 150               | 150                 | 150                 |
| 电压分辨率                                      |                        | V      | 0.01                                                                         | 0.01               | 0.01               | 0.1               | 0.1                 | 0.1                 |
| 电流分辨率                                      |                        | A      | 0.01                                                                         | 0.01               | 0.01               | 0.001             | 0.001               | 0.001               |
| 功率分辨率                                      |                        | W      | 1                                                                            | 1                  | 1                  | 1                 | 1                   | 1                   |
| 按钮                                         |                        |        | Menu, Local, Exit, Clear, Enter, Lock, Current, Shift Output, Numeric Keypad |                    |                    |                   |                     |                     |
| 旋钮                                         |                        |        | Turn the knob to increase or decrease the value.                             |                    |                    |                   |                     |                     |
| USB port                                   |                        |        | Type A USB connector                                                         |                    |                    |                   |                     |                     |
| 编程和测量(数字接口)                                |                        |        |                                                                              |                    |                    |                   |                     |                     |
| 输出电压编程范围                                   |                        | V      | 0 to 84                                                                      | 0 to 210           | 0 to 525           | 0 to 787.5        | 0 to 1050           | 0 to 1575           |
| 输出电流编程范围                                   |                        | A      | 0 to 535.5                                                                   | 0 to 220.5         | 0 to 94.5          | 0 to 63           | 0 to 47.25          | 0 to 31.5           |
| 输出功率编程范围                                   |                        | W      | 0 to 15300                                                                   | 0 to 15300         | 0 to 15300         | 0 to 15300        | 0 to 15300          | 0 to 15300          |
| 输出电压编程精度 [0.1 % of Vo_rated]               |                        | mV     | 80                                                                           | 200                | 500                | 750               | 1000                | 1500                |
| 输出电流编程精度 [0.2 % of Io_rated]               |                        | mA     | 1020                                                                         | 420                | 180                | 120               | 90                  | 60                  |
| 输出功率编程精度 [1 % of Po_rated]                 |                        | W      | 150                                                                          | 150                | 150                | 150               | 150                 | 150                 |
| 输出电压编程分辨率                                  |                        | mV     | 10                                                                           | 10                 | 10                 | 100               | 100                 | 100                 |
| 输出电流编程分辨率                                  |                        | mA     | 10                                                                           | 10                 | 10                 | 1                 | 1                   | 1                   |
| 输出功率编程分辨率                                  |                        | W      | 1                                                                            | 1                  | 1                  | 1                 | 1                   | 1                   |
| 输出电压测量精度 [0.1 % of Vo_rated]               |                        | mV     | 80                                                                           | 200                | 500                | 750               | 1000                | 1500                |
| 输出电流测量精度 [0.2 % of Io_rated]               |                        | mA     | 1020                                                                         | 420                | 180                | 120               | 90                  | 60                  |
| 输出功率测量精度 [1 % of Po_rated]                 |                        | W      | 150                                                                          | 150                | 150                | 150               | 150                 | 150                 |

| PHU-15 kW 系列规格                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |        |        |         |         |
|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------|--------|---------|---------|
| 型号                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | PHU | 80-510                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 200-210 | 500-90 | 750-60 | 1000-45 | 1500-30 |
| 输出电压测量分辨率                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | mV  | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 10      | 10     | 100    | 100     | 100     |
| 输出电流测量分辨率                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | mA  | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 10      | 10     | 1      | 1       | 1       |
| 输出功率测量分辨率                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | W   | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1       | 1      | 1      | 1       | 1       |
| 输入特性 (PHU-C)                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |        |        |         |         |
| 标称输入额定值                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     | 3-Phase, 200 V models: 180 Vac to 265 Vac (Covers 200 Vac / 230 Vac)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |        |        |         |         |
| 输入频率范围                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     | 47 Hz to 63 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |        |        |         |         |
| 最大输入电流                                                         | 200 Vac                                                                                                                                                                                                                                                                                                                                                                                                                                                                | A   | 56 A (L1, L2, L3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |        |        |         |         |
| 浪涌电流                                                           | 200 Vac                                                                                                                                                                                                                                                                                                                                                                                                                                                                | A   | Less than 100 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |        |        |         |         |
| 最大输入功率                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | VA  | 18000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |        |        |         |         |
| 功率因数                                                           | Rated Power                                                                                                                                                                                                                                                                                                                                                                                                                                                            |     | > 0.95                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |        |        |         |         |
| 效率 <sup>(*)4</sup>                                             | 200 Vac                                                                                                                                                                                                                                                                                                                                                                                                                                                                | %   | 86 to 94                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |        |        |         |         |
| Hold-up 时间                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     | 10 ms or greater                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |        |        |         |         |
| 输入特性 (PHU-D)                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |        |        |         |         |
| 标称输入额定值                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     | 3-Phase, 400 V models: 342 Vac to 528 Vac (Covers 380/400/415/440/460/480 Vac)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |        |        |         |         |
| 输入频率范围                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     | 47 Hz to 63 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |        |        |         |         |
| 最大输入电流                                                         | 400 Vac                                                                                                                                                                                                                                                                                                                                                                                                                                                                | A   | 28 A (L1, L2, L3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |        |        |         |         |
| 浪涌电流                                                           | 400 Vac                                                                                                                                                                                                                                                                                                                                                                                                                                                                | A   | Less than 50 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |        |        |         |         |
| 最大输入功率                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | VA  | 18000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |        |        |         |         |
| 功率因数                                                           | Rated Power                                                                                                                                                                                                                                                                                                                                                                                                                                                            |     | > 0.95                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |        |        |         |         |
| 效率 <sup>(*)4</sup>                                             | 400 Vac                                                                                                                                                                                                                                                                                                                                                                                                                                                                | %   | 87 to 94                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |        |        |         |         |
| Hold-up 时间                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     | 10 ms or greater                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |        |        |         |         |
| 接口功能                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |        |        |         |         |
| USB<br>LAN                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     | Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB Class: CDC(Communications Device Class)<br>MAC Address, DNS IP Address, User Password, Gateway IP Address,<br>Instrument IP Address, Subnet Mask                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |        |        |         |         |
| 隔离模拟控制接口<br>工厂选配                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     | Vset / Iset = 0 V to 5 V or 0 V to 10 V   Vmon / Imon = 0 V to 5 V or 0 V to 10 V<br>RS-232&485 or GPIB or CAN Bus or DeviceNet or Isolated Digital I/O                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |        |        |         |         |
| 隔离模拟控制接口                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |        |        |         |         |
| Vout 电压编程<br>Iout 电压编程<br>Pout 电压编程<br>Internal resistance电压编程 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     | 0 % to 100%, 0 V to 5 V Accuracy: ± 1 % of rated Vout, or 0~10 V Accuracy: ± 1 % of rated Vout<br>0 % to 100 %, 0 V to 5 V Accuracy: ± 1 % of rated Iout, or 0 V to 10 V Accuracy: ± 1 % of rated Iout<br>0 % to 100 %, 0 V to 5 V Accuracy: ± 1 % of rated Pout, or 0 V to 10 V Accuracy: ± 1 % of rated Pout<br>0 % to 100 %, 0 V to 5 V Accuracy: ± 1 % of maximum Rint,<br>or 0 V to 10 V Accuracy: ± 1 % of maximum Rint<br>0 V to 5 V or 0 V to 10 V, Accuracy: ± 1 %.<br>0 V to 5 V or 0 to 10 V, Accuracy: ± 1 %.<br>Voltage reference for 0 V to 5 V or 0 V to 10 V.<br>Turn off the PHU output with a High (4.5 V to 5 V) |         |        |        |         |         |
| 输出电压监测器<br>输出电流压监测器<br>参考电压<br>警报输入                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |        |        |         |         |
| 输出on/off控制                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     | Possible logic selections:<br>Turn the output on using a LOW (0 V to 0.5 V) or short-circuit,<br>turn the output off using a HIGH (4.5 V to 5 V) or open-circuit.<br>Turn the output on using a HIGH (4.5 V to 5 V) or open-circuit,<br>turn the output off using a LOW (0 V to 0.5 V) or short-circuit.                                                                                                                                                                                                                                                                                                                            |         |        |        |         |         |
| 警报清除控制<br>CV/CC/CP/ALM/PWR ON/OUT ON indicator                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     | Clear alarms with a High (4.5V to 5V)<br>Photocoupler open collector output; Maximum voltage 30 V, maximum sink current 8 mA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |        |        |         |         |
| 环境条件                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |        |        |         |         |
| 工作温度<br>存储温度<br>工作湿度<br>存储湿度<br>海拔                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     | 0 °C to 50 °C<br>-25 °C ~ 70 °C<br>20 % to 85 % RH; No condensation<br>90 % RH or less; No condensation<br>Maximum 2000 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |        |        |         |         |
| 一般规格                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |        |        |         |         |
| 重量                                                             | main unit only                                                                                                                                                                                                                                                                                                                                                                                                                                                         | kg  | Less than 40 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |        |        |         |         |
| 尺寸 (W×H×D)                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | mm  | 442 mm × 130 mm × 675 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |        |        |         |         |
| 冷却<br>EMC<br>安全<br>耐压<br><br>绝缘电阻                              | Forced air cooling by internal fan<br>Complies with the European EMC directive 89/336/EEC for Class A test and measurement products.<br>Complies with the European Low Voltage Directive 73/23/EEC and carries the CE-marking.<br>Chassis and output terminal; chassis and AC input;<br>AC input and output terminal: AC 1500 V or DC 2130 V 1 minute<br>Chassis and output terminal; chassis and AC input;<br>AC input and output terminal: 100 MΩ or more (DC 500 V) |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |        |        |         |         |

注意:

- (\*)1 最小电压保证为最大额定输出电压的0.2 %。
- (\*)2 最小电流保证为最大额定输出电流的0.4 %。
- (\*)3 在180 ~ 265 Vac或 342 ~ 528 Vac下, 固定负载。
- (\*)4 从空载到满载, 输入电压固定。在侦测点测量(远程补偿)。
- (\*)5 80 V, 200 V : 用JEITA RC-9131B (1:1)探头测量。  
500 V, 750 V, 1000 V和1500 V : 用 (100:1) 探头测量。
- (\*)6 测量频率带宽为10 Hz至20 MHz。
- (\*)7 测量频率带宽为5 Hz-1 MHz。
- (\*)8 额定输出电压的10 %至90 %, 带额定电阻负载。
- (\*)9 额定输出电压的90 %至10 %, 带额定电阻负载。

- (\*)10 当负载从其额定输出电流的10 %变化到90 %时,  
输出电压恢复到其额定输出的1 %以内的时间。  
额定输出10 %至100 %的电压设定值。
- (\*)11 对于负载电压变化, 等于单位额定电压, 固定输入电压。
- (\*)12 纹波是在20 ~ 100 %的输出电压和全输出电流下测量的。
- (\*)13 输出功率变化范围为10~90 %, 输入电压固定。
- (\*)14 在额定输出功率下。

## 订购信息

| 5 kW                                                                                                               | 10 kW                                                                                                                | 15 kW                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>PHU 80-170</b><br>80V, 170A, 5000W可编程直流电源<br>PHU 80-170-C (输入电压 3P3W 200V)<br>PHU 80-170-D (输入电压 3P4W 380V)     | <b>PHU 80-340</b><br>80V, 340A, 10,000W可编程直流电源<br>PHU 80-340-C (输入电压 3P3W 200V)<br>PHU 80-340-D (输入电压 3P4W 380V)     | <b>PHU 80-510</b><br>80V, 510A, 15,000W可编程直流电源<br>PHU 80-510-C (输入电压 3P3W 200V)<br>PHU 80-510-D (输入电压 3P4W 380V)     |
| <b>PHU 200-70</b><br>200V, 70A, 5000W可编程直流电源<br>PHU 200-70-C (输入电压 3P3W 200V)<br>PHU 200-70-D (输入电压 3P4W 380V)     | <b>PHU 200-140</b><br>200V, 140A, 10,000W可编程直流电源<br>PHU 200-140-C (输入电压 3P3W 200V)<br>PHU 200-140-D (输入电压 3P4W 380V) | <b>PHU 200-210</b><br>200V, 210A, 15,000W可编程直流电源<br>PHU 200-210-C (输入电压 3P3W 200V)<br>PHU 200-210-D (输入电压 3P4W 380V) |
| <b>PHU 500-30</b><br>500V, 30A, 5000W可编程直流电源<br>PHU 500-30-C (输入电压 3P3W 200V)<br>PHU 500-30-D (输入电压 3P4W 380V)     | <b>PHU 500-60</b><br>500V, 60A, 10,000W可编程直流电源<br>PHU 500-60-C (输入电压 3P3W 200V)<br>PHU 500-60-D (输入电压 3P4W 380V)     | <b>PHU 500-90</b><br>500V, 90A, 15,000W可编程直流电源<br>PHU 500-90-C (输入电压 3P3W 200V)<br>PHU 500-90-D (输入电压 3P4W 380V)     |
| <b>PHU 750-20</b><br>750V, 20A, 5000W可编程直流电源<br>PHU 750-20-C (输入电压 3P3W 200V)<br>PHU 750-20-D (输入电压 3P4W 380V)     | <b>PHU 750-40</b><br>750V, 40A, 10,000W可编程直流电源<br>PHU 750-40-C (输入电压 3P3W 200V)<br>PHU 750-40-D (输入电压 3P4W 380V)     | <b>PHU 750-60</b><br>750V, 60A, 15,000W可编程直流电源<br>PHU 750-60-C (输入电压 3P3W 200V)<br>PHU 750-60-D (输入电压 3P4W 380V)     |
| <b>PHU 1000-15</b><br>1000V, 15A, 5000W可编程直流电源<br>PHU 1000-15-C (输入电压 3P3W 200V)<br>PHU 1000-15-D (输入电压 3P4W 380V) | <b>PHU 1000-30</b><br>1000V, 30A, 10,000W可编程直流电源<br>PHU 1000-30-C (输入电压 3P3W 200V)<br>PHU 1000-30-D (输入电压 3P4W 380V) | <b>PHU 1000-45</b><br>1000V, 45A, 15,000W可编程直流电源<br>PHU 1000-45-C (输入电压 3P3W 200V)<br>PHU 1000-45-D (输入电压 3P4W 380V) |
| <b>PHU 1500-10</b><br>1500V, 10A, 5000W可编程直流电源<br>PHU 1500-10-C (输入电压 3P3W 200V)<br>PHU 1500-10-D (输入电压 3P4W 380V) | <b>PHU 1500-20</b><br>1500V, 20A, 10,000W可编程直流电源<br>PHU 1500-20-C (输入电压 3P3W 200V)<br>PHU 1500-20-D (输入电压 3P4W 380V) | <b>PHU 1500-30</b><br>1500V, 30A, 15,000W可编程直流电源<br>PHU 1500-30-C (输入电压 3P3W 200V)<br>PHU 1500-30-D (输入电压 3P4W 380V) |

### 附件

AC 输入端子盖 x 1, DC 输出端子盖x 1, 手柄 x 2, 传感连接器 x 1, 传感连接器盖 x 1,  
数字输入/输出控制连接器 x 1, Parallel control dummy connector x 1, 直流输出端子螺丝 x 2, 安全指南

### 选配

|                 |                          |
|-----------------|--------------------------|
| <b>PHU-IF01</b> | GPiB 接口                  |
| <b>PHU-IF02</b> | RS-232C&RS-485接口卡 (RJ45) |
| <b>PHU-IF03</b> | 隔离数字接口卡                  |
| <b>PHU-IF04</b> | CANbus 接口卡               |
| <b>PHU-IF05</b> | DeviceNet接口卡             |
| <b>PHU-IF06</b> | Anybus Riser card        |

### 选配附件

|                 |                          |                |                                                                                 |
|-----------------|--------------------------|----------------|---------------------------------------------------------------------------------|
| <b>PHU-PC01</b> | 并联线 ( for 2 units ) x 1  | <b>GTL-133</b> | 输出线, 1.5 m, 100 A                                                               |
| <b>PHU-PC02</b> | 并联线 ( for 3 units ) x 1  | <b>GTL-218</b> | 输出线, 1.5 m, 200 A                                                               |
| <b>PHU-PC03</b> | 并联线 ( for 4 units ) x 1  | <b>GTL-219</b> | 输出线, 3 m, 200 A                                                                 |
| <b>PHU-PC04</b> | 并联线 ( for 5 units ) x 1  | <b>GTL-220</b> | 输出线, 1.5 m, 300 A                                                               |
| <b>PHU-PC05</b> | 并联线 ( for 6 units ) x 1  | <b>GTL-221</b> | 输出线, 3 m, 300 A                                                                 |
| <b>PHU-PC06</b> | 并联线 ( for 7 units ) x 1  | <b>GTL-222</b> | 输出线, 1.5 m, 400 A                                                               |
| <b>PHU-PC07</b> | 并联线 ( for 8 units ) x 1  | <b>GTL-223</b> | 输出线, 3 m, 400 A                                                                 |
| <b>PHU-PC08</b> | 并联线 ( for 9 units ) x 1  | <b>GPW-021</b> | 输入电源线, 10 AWG/4C, 3 m, UL/CSA<br>(PHU-C-5kW, PHU-D-5kW, PHU-D-10kW, PHU-D-15kW) |
| <b>PHU-PC09</b> | 并联线 ( for 10 units ) x 1 | <b>GPW-022</b> | 输入电源线, 6 AWG/4C, 3 m, UL/CSA (PHU-C-10kW, PHU-C-15kW)                           |

技术规格变动恕不另行通知 PHU2025CS0-03

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**GW INSTEK**

